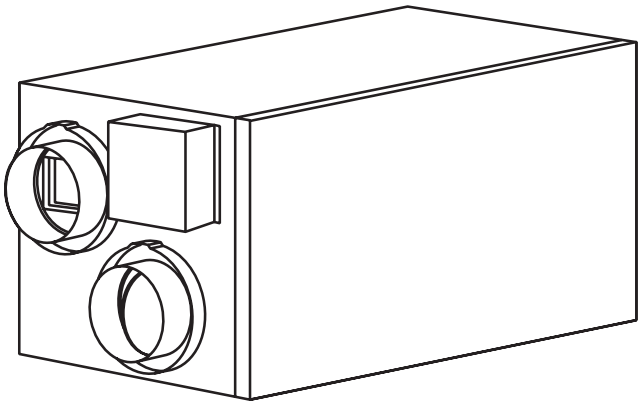
ERVBBLHA
ENERGY RECOVERY VENTILATORS

bryant®

Product Data



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The Energy Recovery Ventilation (ERV) system offered by Bryant is the finest on the market today. The ERV provides efficient and cost effective heat recovery during the heating season when needed most.

As temperatures drop below 23°F (-5°C), indoor air is recirculated periodically through the heat exchanger core to prevent frost from forming. Competitors' methods of supplementary electric defrost waste energy. Unlike rotary wheel heat exchangers which mix air streams, these cross-flow or counterflow heat exchangers ensure that there is no mixing of the stale air stream with the fresh outdoor air stream.

A filter installed on the incoming outdoor air stream removes large airborne particles from the intake air stream before they enter the heat exchanger and reduces the maintenance required. (A filter is also installed on the outgoing air stream, up stream of the heat exchanger core.) The units' acoustically engineered design makes the Bryant ERV the quietest on the market and ensures that comfort is felt, not heard.

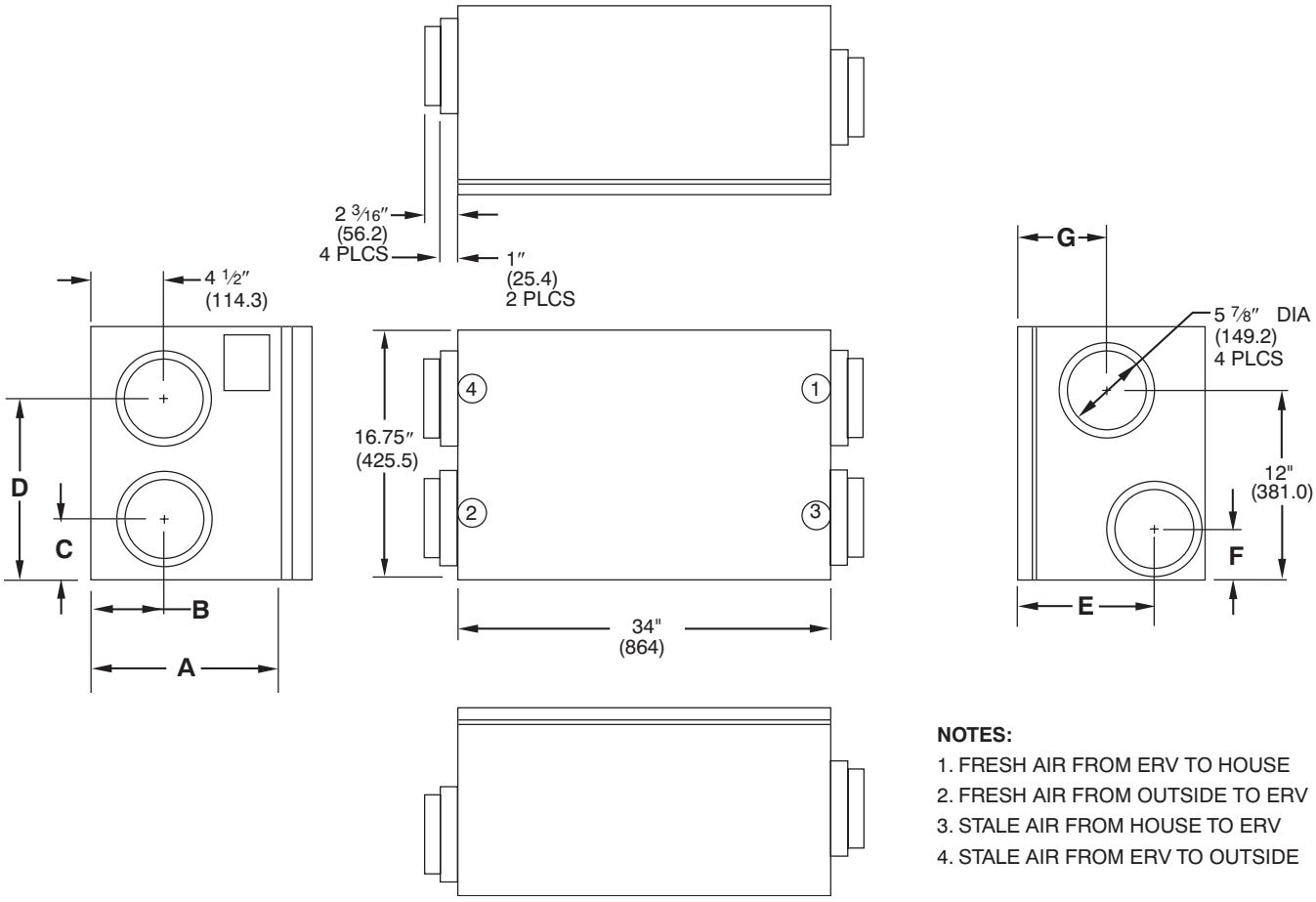
Unlatching two (2) suitcase style latches allows easy removal of the filters and core for cleaning.

STANDARD FEATURES

- Drainless design
- Integrated airflow balancing points
- Integrated furnace interlock
- Acoustical design
- Onboard control for continuous high/low ventilator operation
- Energy saving defrost cycle
- Cross-flow, counterflow heat exchangers
- One filter on incoming air; one filter on outgoing air to protect core
- No-tools maintenance
- Enthalpic heat exchanger core

MODEL NUMBER NOMENCLATURE

ERV	BB	LHA	1	150
Product Type	Brand	Model Type	Electrical Supply	Maximum Capacity
Energy Recovery Ventilator	Bryant	LHA – Large Horizontal	1 – 115 Volts	150 CFM 200 CFM



NOTES:

1. FRESH AIR FROM ERV TO HOUSE
2. FRESH AIR FROM OUTSIDE TO ERV
3. STALE AIR FROM HOUSE TO ERV
4. STALE AIR FROM ERV TO OUTSIDE

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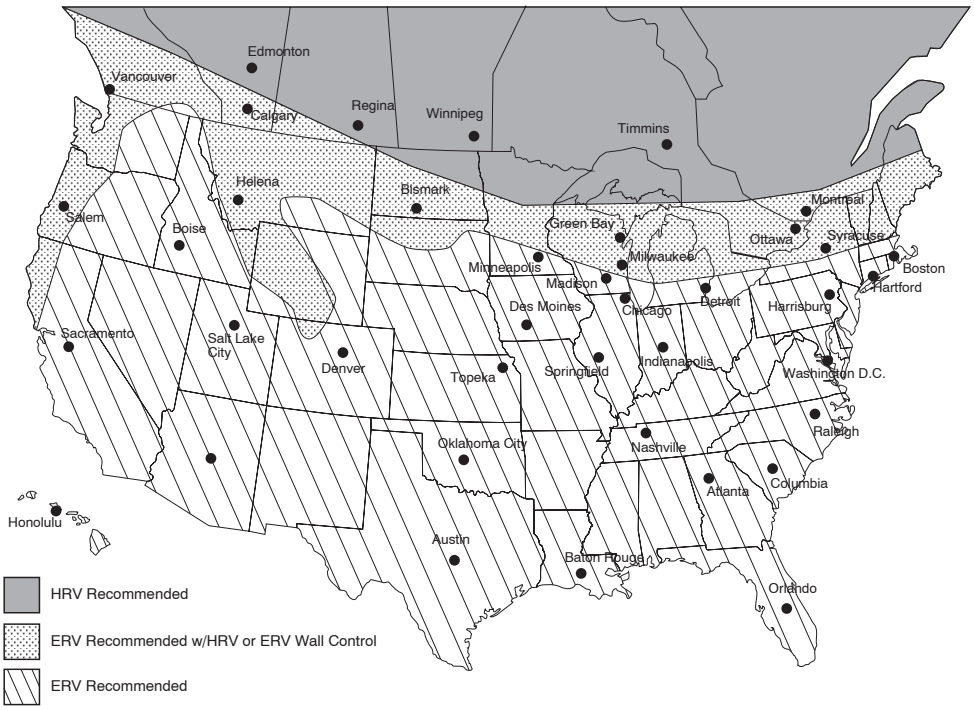
DIMENSIONS

MODEL	A		B		C		D		E		F		G	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
ERVBBLHA	17 – 1/4	438.2	10	254	4 – 1/2	114.3	11	279.4	7 – 3/4	196.9	4 – 1/4	108	9 – 1/2	241.3

Climate Map for Energy and Heat Recovery Ventilators



ERVBBLHA

PHYSICAL DATA

MODEL	ERVBBLHA1150	ERVBBLHA1200
Port Locations	Sides	Sides
Core Type	Enthalpic transfer media, cross flow	Enthalpic transfer media, cross flow
Weight — lb (kg)	74 (33.6)	76 (34.5)
Shipping Weight — lb (kg)	78 (35.4)	80 (36.3)
Shipping Dimensions in. (mm)		
Height	19.75 (502)	19.75 (502)
Width	20.5 (521)	20.5 (521)
Length	40.5 (1029)	40.5 (1029)

MODEL	ERVBBLHA1150	ERVBBLHA1200
Capacity—CFM @ 0.5-0.3ESP (in. wc)	60–148	60–183
Efficiency (Sensible)—Percent		
32°F (0° C)	60	58
–13°F (–25° C)	49	41
Efficiency (Latent)—Percent @ all temperatures	58	53
Cooling Season Total Recovery Efficiency 95°F (35°C)	56	52

MODEL	ERVBBLHA1150	ERVBBLHA1200
Voltage	120	120
Max Power — watts	150	240
Max Amps	1.3	2.1

METHODS TO SIZE ERVs

METHOD 1

1. Calculate cu ft of occupied space.
2. Multiply by recommended air changes per hr (AC/h).
3. Divide by 60 minutes per hr to convert to CFM.

Example:

2000 sq ft with 8 ft ceiling, 0.35 air changes per hr (AC/h)

(2000 sq ft x 8 ft ceiling x 0.35 AC/h) / 60 min/h = 93.3 CFM

METHOD 2

1. Multiply number of people times 15 CFM/person.
2. Multiply number of bath rooms 20 CFM/each.
3. Add 25 CFM for kitchen.

Example:

2 people, 2 baths, 1 kitchen

(2 x 15) + (2 x 20) + 25 = 95 CFM

HEATING AND COOLING LOAD CHARTS

Although the ventilators process the outside air before it enters the home, additional heating and cooling loads need to be considered.

HEATING LOAD BTUH

Outside Temp °F	Heating Load (Btuh) @ Inside Design Temp 72°F			
	ERV150	ERV200	HRV150	HRV250
–25	5186	8143	6636	10603
–20	4919	7723	6294	10057
–15	5075	7967	5952	9510
–10	4783	7509	5610	8964
–5	4491	7051	5268	8417
0	4200	6594	4925	7871
5	4234	6647	4583	7324
10	3918	6151	4241	6777
15	3958	6214	3899	6231
20	3611	5669	3557	5684
25	3264	5124	3215	5138
30	2916	4579	2873	4591
35	2569	4034	2531	4045
40	2222	3489	2189	3498

The heating load chart shows the heating loads in Btuh for a range of winter design temperatures for each model of ventilator.

EXAMPLE: The heating design temperature for Little Rock, AR is 20°F. The additional heating load of the ERVBBLHA1200 at 20°F is 559 Btuh. This additional load should be taken into consideration when sizing the heating equipment.

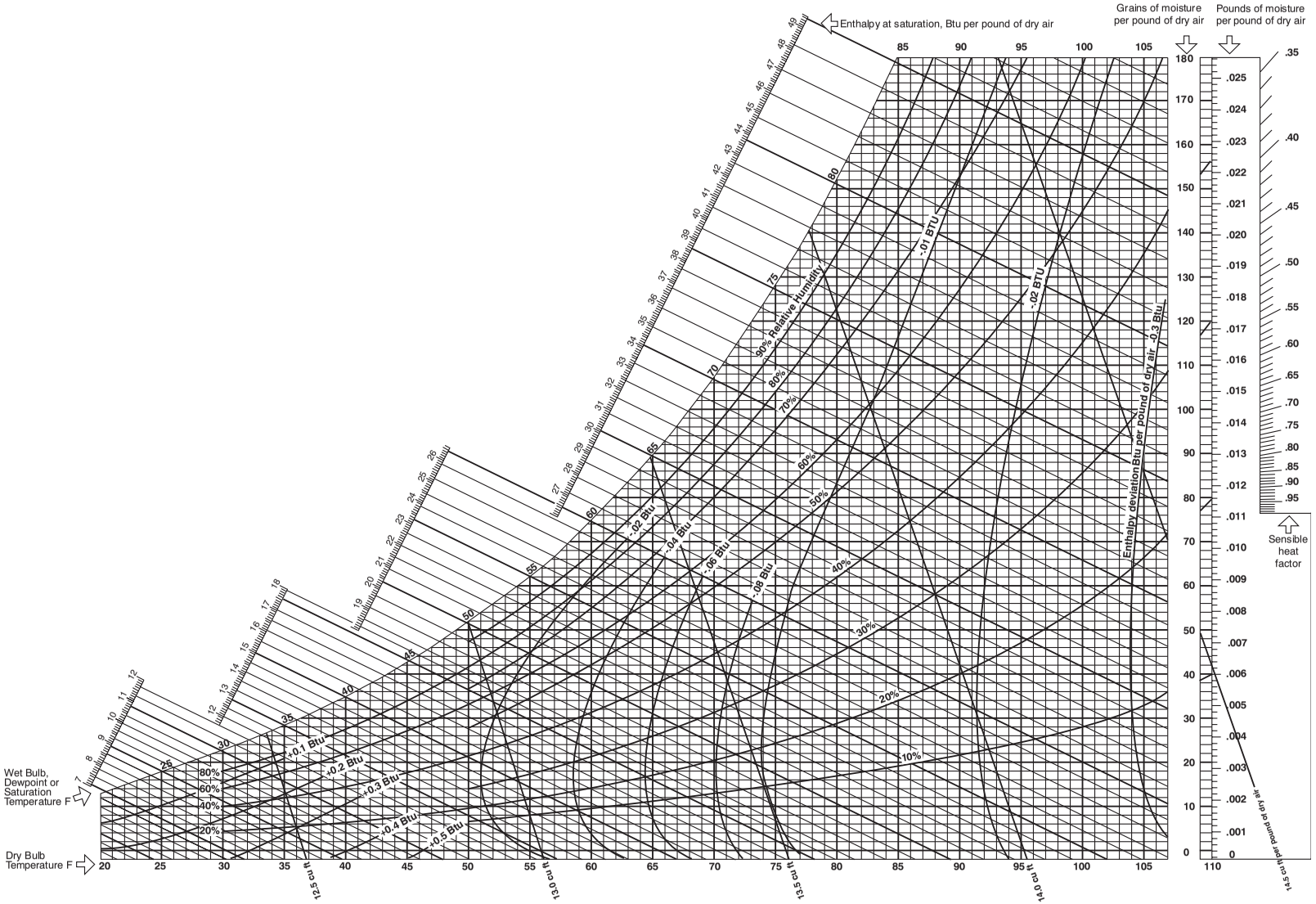
COOLING LOAD BTUH

Outside Enthalpy	Cooling Load (Btuh) @ Inside Design Temp 72°F and 50% Relative Humidity			
Btu/lb	ERV150	ERV200	HRV150	HRV250
30	380	640	670	1071
31	618	1040	1090	1741
32	855	1441	1509	2411
33	1093	1841	1928	3080
34	1331	2241	2347	3750
35	1568	2641	2766	4419
36	1806	3041	3185	5089
37	2043	3441	3604	5759
38	2281	3842	4023	6428
39	2519	4242	4442	7098
40	2756	4642	4861	7767
41	2994	5042	5280	8437
42	3231	5442	5699	9107

The cooling load chart shows loads in Btuh as well. To use the cooling load chart, first find the design enthalpy from a psychrometric chart using the design dry bulb and wet bulb temperatures. (See pg. 7.) The cooling load can then be found for a range of enthalpies for each ventilator.

EXAMPLE: The design dry bulb temperature for Miami is 90°F and the average wet bulb at that temperature is 77°F. Using the psychrometric chart, the enthalpy is about 40.5 Btu per pound (Btu/lb) of dry air, which would round up to 41 Btu/lb dry air. In the left column, at 41 Btu/lb dry air, the ERVBBLHA1200 has an additional cooling load of 5042 Btuh, while the HRV150CFM unit has an additional cooling load of 8437 Btuh.

PSYCHROMETRIC CHART



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ACCESSORIES

ITEM	ACCESSORY PART NO.	ERVBBLHA SIZE USED WITH
Bryant OneTouch Control	KVBCN0101BLT	All
Bryant Basic Wall Control	KVBCN0101BBS	All
Bryant Latent Wall Control	KVACN0101BLC	All
60–Minute Timer Kit	KVATM010160M	All
Bryant 20–Minute Push Button	KVATM010120B	All
Airflow Measuring Kit	KVBAC0101KIT	All
Hood (2 required)	KVAAC0101HOD	All

ACCESSORY DESCRIPTION, SUGGESTED AND REQUIRED USE

Bryant OneTouch Control
Control option choice. Used with all ERVs as a main wall control.

Bryant Basic Wall Control
Control option choice. Can be used with all ERVs.

Bryant Latent Wall Control
Control option choice. Can be used with all ERVs.

60-Minute Timer Kit
Used with all ERVs, time is adjustable between 10 and 60 minutes.

Bryant 20-Minute Push Button
Used with all ERVs when 20 minute manual operation is required

Airflow Measuring Kit
Start up Balancing Kit, includes Magnehelic Gauge

Hood (2 required)
Used with all ERVs. Exterior intake and exhaust hoods.

Control Description	Fan Speed Control	Humidistat Control	Continuous Mode	Intermittent Mode
OneTouch	Yes	No	Yes	Yes
Latent	Yes	Yes	Yes	Yes

Control features

OneTouch Control:

Allows control of ventilator with the touch of a button. This control will operate as a main wall control. The OneTouch will operate the unit in Intermittent Mode (20 minutes per hour), continuous low speed, continuous high speed, and off.

Latent Control:

Low Exchange Mode—If the relative humidity inside the building is lower than selected, air exchange would occur with the outside at high speed. If the relative humidity inside the building is higher than selected, air exchange would occur with the outside at low speed. This ensures continuous air exchange for constant air quality.

Intermittent Mode—If the relative humidity inside the building is higher than selected, no air exchange would occur and the system would turn off. If the relative humidity inside the building is lower than selected, air exchange would occur with outside at high speed. this mode is ideal for maintaining the proper humidity level when the continuous mode cannot.

Automatic Defrost Cycle Features

All models offer a non-electric defrost cycle feature which prevents frost and ice buildup within the heat recovery core. When the outside air temperature falls below 23°F (-5°C) it is electronically sensed and the dampers close the outside air ports. This allows warm indoor air to recirculate within the heat recovery core. The frequency of this cycle increases as the outside air temperature decreases.

Model	25°F (–5°C)		4°F TO –17°F (–15.6°C TO –27.3°C)		BELOW –18°F (–27.8°C)	
	DEFROST*	EXCHANGE†	DEFROST*	EXCHANGE†	DEFROST*	EXCHANGE†
ERVBBLHA	10 Minutes	60 Minutes	10 Minutes	30 Minutes	10 Minutes	20 Minutes

* All defrost times are in the standard mode (as shipped)
† Time between defrost when within specified temperature range

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 Replaces: NEW